

REMARKS

Reconsideration and allowance of this application are respectfully requested in view of the foregoing amendments and the following explanations and remarks.

In the previous Office Action dated 9/22/04, claim 11 was deemed to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Examiner pointed out that Devine et al (5,720,438) fails to teach or suggest connecting the exhaust to all of the grinding and grating means, the upwardly inclined screw conveyor, and the vertical screw conveyor, as recited in provisionally allowable claim 11.

In the previous Amendment dated 12/21/04, base claims 1 and 8 were amended to include the subject matter of provisionally allowable claim 11 and intervening claim 10.

In the present Office Action, on page 2, paragraph 2, the Examiner objected to the specification as failing to provide a proper antecedent basis for the claimed subject matter in amended claims 1 and 8, and required correction; and on page 3, paragraph 4, claims 1 and 8 were rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement for the reasons set forth in the objection to the specification.

The Examiner pointed out that claims 1 and 8 require utilizing the exhaust heat of the petroleum fuel engine to dry the waste material during said steps of grinding, grating, macerating, spraying, immersing and conveying. However, in the specification on page 19, last three lines, it is stated that: "Drying is accomplished by industrial heaters connected with the enclosed conveyor system. Alternatively, the exhaust of the diesel driven generator may be connected with the enclosed system to facilitate drying." The Examiner further pointed out that

on page 22, last four lines, it is stated that: “The particles are dried as they reach the discharge end of the inclined screw conveyor.” And that “...the exhaust of the diesel driven generator may be connected with the enclosed system to facilitate drying.”

All of the above statements are correct. In the present system, the hopper 31, the grinding and grating machine 32, the shroud 39, the inclined screw conveyor 38, and the vertical screw conveyor 45 are all joined together to form an enclosed system. The industrial heaters or the generator engine exhaust may be connected either to the inclined screw conveyor, or at any other point in the enclosed system, and the hot air is distributed throughout the enclosed system; thus subjecting the waste material to the hot air during said steps of grinding, grating, macerating, spraying, immersing and conveying it, and the waste particles are dried as they reach the discharge end of the inclined screw conveyor. However, there may be some confusion in the description between the “enclosed system” and the “enclosed conveyor system”, and how the exhaust of the diesel driven generator is connected with the “enclosed system” to facilitate drying the waste material during the steps of grinding, grating, macerating, spraying, immersing and conveying.

The specification has been amended to incorporate the language appearing in the claims as originally submitted, and to more clearly describe the structural relationship between the “enclosed system” and the “enclosed conveyor system”, and the manner in which the exhaust of the diesel driven generator is connected with the “enclosed system” to facilitate drying. Support for the amended language is found in the specification, drawings, and claims as originally submitted, as set forth below, and does not constitute new matter.

As described in the specification and shown in FIG. 1, as originally submitted, a modified grinding/grating machine 32 is connected to the bottom end of the hopper 32 (page 17, lines 3-4). An upwardly inclined screw conveyor 38 has a lower end disposed beneath the outlet of the modified grinding/grating machine 32 and is joined thereto by a shroud 39 (page 18, lines 1-3). The discharge end of the inclined conveyor 38 is connected to the lower end of an enclosed tubular high-speed vertical conveyor 45 (page 20, lines 1-2). The particles are dried as they reach the discharge end of the inclined screw conveyor (page 22, lines 20-21). Alternatively, the exhaust of the diesel driven generator may be connected with the “enclosed system” to facilitate drying (last sentence bottom of page 22).

As described in original claim 8, the apparatus includes drying means connected with said grinding and grating means, said upwardly inclined screw conveyor, and said vertical screw conveyor to dry said waste particle material. As described in original claims 10 and provisionally allowable original claim 11, the source of power comprises an electrical generator driven by a petroleum fuel engine, and said petroleum fuel engine having an exhaust connected in communication with said grinding and grating means, said upwardly inclined screw conveyor, and said vertical screw conveyor to function as said drying means to dry said waste particle material with exhaust heat.

Thus, it should be understood from the foregoing, that the hopper 31, the grinding/grating machine 32, the shroud 39, the enclosed inclined screw conveyor 38, and the enclosed vertical screw conveyor 45 are all joined together to form an “enclosed system”; and (2) the generator engine exhaust is connected with the “enclosed system” whereby the waste material is subjected

to the hot exhaust “during the steps of grinding, grating, macerating, spraying, immersing and conveying in the enclosed system”, and the waste particles become “dried as they reach the discharge end of the inclined screw conveyor”.

The amendatory language of the specification incorporates the language appearing in claims 8, 10 and 11 as originally submitted, and now more clearly describes the structural relationship between the “enclosed system” and the “enclosed conveyor system”, and the manner in which the exhaust of the diesel driven generator is connected with the “enclosed system” to facilitate drying, as shown in the drawings and described in the specification and claims, as originally submitted. No new matter has been added.

The claims as filed in the original specification are part of the disclosure and therefore, if an application as originally filed contains a claim disclosing material not disclosed in the remainder of the specification, the applicant may amend the specification to include the claimed subject matter. In re Benno, 768 F.2d 1340, 226 USPQ 683 (Fed. Cir. 1985).

Additionally, proposed drawing revisions to FIGS. 1 and 6 are submitted herewith which show, schematically, the generator engine exhaust connected in communication with the hopper 31, the grinding/grating machine 32, the shroud 39, the enclosed inclined screw conveyor 38, and the enclosed vertical screw conveyor 45, as described.

Therefore, it is respectfully submitted that the specification, as now amended provides the proper antecedent basis for the claimed subject matter, and that the specification and drawings, as now amended, more clearly describe and show the subject matter which was originally contained therein, and are now sufficient to overcome the objection.

Claim 1 has been amended to more clearly recite that the petroleum fuel engine has an exhaust connected in communication with said grinding and grating means, said immersion vat means, and said conveyor means; and more clearly recites the step of conducting the hot exhaust

of said petroleum fuel engine into said grinding and grating means, said immersion vat means, and said conveyor means whereby said waste particle material is heated during said steps of grinding, grating, macerating, spraying, immersing and conveying and becomes dried prior to being conveyed to the exterior of said wheeled enclosure by said conveyor means.

Claim 8 has been amended to more clearly recite that the petroleum fuel engine of the generator has an exhaust connected in communication with said grinding and grating means, said upwardly inclined screw conveyor, and said vertical screw conveyor for heating the waste particle material during the steps of grinding, grating, macerating, spraying, immersing and conveying such it becomes dried as it reaches said upper end of said inclined screw conveyor.

Therefore, it is respectfully submitted that claims 1 and 8, as now amended, more clearly describe the subject matter which was contained in the specification and claims as originally submitted, and are now sufficient to overcome the rejection under 35 USC 112, first paragraph. No new subject matter has been added.

On page 3, paragraph 6, of the Office Action, claims 1-4, 8, 12-15, and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Devine et al (U.S. 5,720,438) in view of Pearson (U.S. 4,884,756), and the newly discovered reference Kami (U.S. 5,698,095).

Pearson does not teach or suggest heating the waste materials at all, and Devine et al utilizes hot air to heat the waste material, but does not teach using the exhaust from the generators to heat the waste material. Although the newly discovered reference Kami using heat from engine exhaust gas to dry human waste and flush water from a toilet, it operates on an entirely different heating principle.

Kami teaches a heat accumulator 12 (muffler) connected to the exhaust manifold of a vehicle engine, and provides a drying chamber 13 adjacent to the upper surface of the heat accumulator (muffler). The bottom of the drying chamber 13 is made of a material with good heat conductivity such as stainless steel, and the bottom of the drying chamber 13 and the top of the heat accumulator 12 are one unit.

Thus, Kami operates on the principle of “**conductive heat transfer**”, wherein heat energy is transferred by "conduction" (a transfer of energy between substances in contact), like the heating element of a stove. In other words, heat is transferred between the heat conductive surfaces of the hot muffler and the bottom surface of the drying chamber to heat the interior of the drying chamber. One of the problems with the conductive heat principle is that, once introduced into the drying chamber 13, the human waste starts to dry immediately and the liquid evaporates. This causes the residual human waste to stick to the inside of the drying chamber, and Kami requires a scraper 16 having a plurality of pads of needles which are in contact with the bottom surface of the drying chamber 13 to scrape off the residual human waste stuck to the inside of the drying chamber and a suction device 17 to suction the residual human waste scraped off in the drying chamber.

It is respectfully submitted that it would be unsatisfactory to employ the principle of “**conductive heat transfer**”, as taught by Kami, in an enclosed system of grinding and grating apparatus and screw conveyors, and such a modification would render the system inoperable because the waste material would tend to stick to the metal surfaces during the steps of grinding, grating, macerating, and conveying.

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

The present invention, on the other hand, operates on the principle of “**convection heat transfer**”, wherein heat energy is transferred by “convection” (a transfer of heat by the circulation of heated air). Convection is the transfer of heat to the waste material caused by the movement of the hot exhaust gas. This heating method renders the waste material into a substantially dry, fluffy, confetti-like material.

Thus, the proposed combination of Devine et al, Pearson, and Kami would change the principle of the heating operation of Devine et al, and the present invention, to operate on conductive heat transfer between heat conductive surfaces rather than convection heat transfer by the circulation of heated air, or hot exhaust from the engine.

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). The court held that the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." 270 F.2d at 813, 123 USPQ at 352.).

Even if Kami were combined with Devine et al and Pearson, none of these references alone or in combination teach or suggest the method of conducting the hot exhaust of a petroleum fuel engine into the grinding and grating means, the immersion vat means, and the conveyor means, nor the apparatus with a petroleum fuel engine having an exhaust connected in communication with the grinding and grating means, the upwardly inclined screw conveyor, and the vertical screw conveyor for heating the waste particle material during the steps of grinding, grating, macerating, spraying, immersing and conveying, as recited in base claims 1 and 8.

Therefore it is respectfully submitted that the cited combination of Devine et al, Pearson, and Kami does not teach the combination of elements working together as a whole, as now recited in base claims 1 and 8, and that the claims, as now amended are clearly distinguished over the proposed combination and modification. The remarks set forth above apply equally to claims 2-4, and 12-15 and 17, which include additional limitations of the base claims.

On page 5, paragraph 7, of the Office Action, claims 5 and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Devine et al (U.S. 5,720,438), Pearson (U.S. 4,884,756), Kami (U.S. 5,698,095), and further in view of Buehler et al (U.S. 5,364,589).

Claims 5 and 16 depend from base claims 1 and 8, respectively, and are directed toward the method of claim 1 including further step of compacting the dry confetti-like material discharged from the enclosed screw conveyor, and the apparatus of claim 8 further comprising compactor means for receiving and compacting the discharged waste particle material.

As discussed above, the proposed combination of Devine et al, Pearson, and Kami would change the principle of the heating operation of Devine et al, and the present invention, to operate on conductive heat transfer between heat conductive surfaces rather than convection heat transfer by the circulation of heated air, or hot exhaust from the engine.

Claims 5 and 16 depend from base claims 1 and 8, respectively, and are directed toward the method of claim 1 including further step of compacting the dry confetti-like material discharged from the enclosed screw conveyor, and the apparatus of claim 8 further comprising compactor means for receiving and compacting the discharged waste particle material.

Applicants are not attempting to claim the step of compacting, nor the compactor means independently apart from the whole combination, nor suggesting that these individual method steps or structural elements be withdrawn from the public domain, but are claiming only the recited specific combination of method steps and structure defined in the limitations of the claims working together as a whole.

Claims 5 and 16 should be considered in their entirety including all of the features and limitations of the base claims. None of these references alone or in combination teach or suggest the method of conducting the hot exhaust of a petroleum fuel engine into the grinding and grating means, the immersion vat means, and the conveyor means, nor the apparatus with a petroleum fuel engine having an exhaust connected in communication with the grinding and grating means, the upwardly inclined screw conveyor, and the vertical screw conveyor for heating the waste particle material during the steps of grinding, grating, macerating, spraying, immersing and conveying, as recited in base claims 1 and 8.

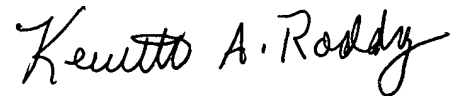
Therefore it is respectfully submitted that the cited combination of Devine et al, Pearson, Kami, and Buehler et al does not teach the combination of elements working together as a whole, as now recited in claims 5 and 16, including the limitations of base claims 1 and 8, respectively, and that the claims are clearly distinguished over the proposed combination and modification.

Applicant's agent has examined the Lewis et al reference (U.S. 5,941,468) which was noted on page 5, paragraph 8, of the Office Action, but not applied to the claims, and submits that this reference does not teach or suggest the combination of features working together as a whole as set forth in the claims now in this case.

Attached hereto are two sheets of drawings showing proposed drawing revisions to FIGS. 1 and 6 indicated in red ink.

Accordingly, in view of the foregoing amendments, explanations and remarks it is respectfully requested that amended claims 1-5, 8 and 12 – 17 be allowed, and that this application be passed to issue.

Respectfully submitted,

A handwritten signature in black ink that reads "Kenneth A. Roddy". The signature is written in a cursive, flowing style.

Kenneth A. Roddy
Agent for Applicants
Registration No. 31,294

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2916 West T. C. Jester Blvd.
Suite 100
Houston, TX 77018
(713) 686-7676